

**To:** Card, Joan[Card.Joan@epa.gov]  
**Cc:** Kimbrough, Robert[rakimbrow@usgs.gov]; Lori Caramanian[lori\_caramanian@ios.doi.gov]; Robert Horton[rhorton@usgs.gov]; Timothy Raines[thraines@usgs.gov]; Suzanne Paschke[spaschke@usgs.gov]; Mark Sogge[mark\_sogge@usgs.gov]; David Susong[ddsusong@usgs.gov]; David Mau[dpmau@usgs.gov]; Matt Ely[mely@usgs.gov]; James Leenhouts[leenhout@usgs.gov]  
**From:** Ethridge, Max  
**Sent:** Sun 8/9/2015 9:36:49 PM  
**Subject:** Re: Runoff data for USGS streamgage 09358550 Cement Creek at Silverton, CO

Joan,

I'm trying to contact the USGS folks that have the access to the data from our stream gages, and the capability to compute the travel time estimate that you requested. I have not been able to contact all of them, but we will start working on the estimate as soon as we can.

Just to be clear, you want an estimate for the day/time when the plume will arrive at Lake Powell-- is that correct?

Max

On Sun, Aug 9, 2015 at 12:42 PM, Card, Joan <[Card.Joan@epa.gov](mailto:Card.Joan@epa.gov)> wrote:

Max and others. I'm loathe to do this to you on Sunday, but am now asking if it's possible for you to help us with an estimate of travel time increase through the river system to Lake Powell due to the additional 2 million gallons?

Joan Card  
Senior Policy Advisor  
Region 8

Sent from my EPA iPhone

On Aug 9, 2015, at 12:08 PM, Ethridge, Max <[methridge@usgs.gov](mailto:methridge@usgs.gov)> wrote:

Joan,  
Yes, you can quote/attribute this estimate to USGS.

Max

On Sun, Aug 9, 2015 at 8:48 AM, Card, Joan <[Card.Joan@epa.gov](mailto:Card.Joan@epa.gov)> wrote:

Bob, and others, thank you very much. Our plan will be to review this information at EPA and then, likely fairly early today, announce a revised estimate based on your statement below.

Can we quote/attribute to USGS from the statement below?

Joan Card  
Senior Policy Advisor  
Office of the Regional Administrator  
EPA, Region 8 (CO, MT, ND, SD, UT, WY)  
1595 Wynkoop  
Denver, CO 80202  
  
(303) 312-6468

---

**From:** Kimbrough, Robert <[rakimbro@usgs.gov](mailto:rakimbro@usgs.gov)>  
**Sent:** Sunday, August 9, 2015 8:56 AM  
**To:** Card, Joan  
**Cc:** Max Ethridge; Lori Caramanian; Robert Horton; Timothy Raines; Suzanne Paschke; Robert Kimbrough  
**Subject:** Runoff data for USGS streamgage 09358550 Cement Creek at Silverton, CO

Joan,

Max Ethridge asked me to provide you with the following information.

The USGS operates a streamgage near the mouth of Cement Creek in Silverton, Colorado which recorded a relatively flashy runoff event on August 5, 2015  
([http://waterdata.usgs.gov/co/nwis/uv/?site\\_no=09358550&PARAMeter\\_cd=00065,00060](http://waterdata.usgs.gov/co/nwis/uv/?site_no=09358550&PARAMeter_cd=00065,00060)).

The streamgage provides provisional stream stage and discharge values in 15-minute increments. The event started about 12:30 PM and ended about 7:15 PM. The total volume of runoff for the event above base flow was calculated by 1) subtracting an assumed base flow of 27 cubic feet per second from each 15-minute discharge value, 2) using the resulting discharge values to compute the total volume of runoff for each 15-minute period (initially in cubic feet and then gallons), and 3) summing the volume of runoff for each 15-minute period. This resulted in a calculated runoff volume above base flow for the event of 3,043,067 gallons which is rounded to an estimate of 3 million gallons. The data are considered provisional because the stage and discharge records have not yet gone through a formal review. However, one of our technicians visited the gage on July 31 and August 8, 2015 and we are confident the streamgage is providing good provisional data for August 5.

Please let me know if I can be of further assistance.

Bob

**Robert Kimbrough | U.S. Geological Survey**

Associate Director for Hydrologic Data | Colorado Water Science Center

office: 303.236.6902 | cell: 720.428.9576 | email: [rakimbro@usgs.gov](mailto:rakimbro@usgs.gov)

--

Max M Ethridge, PhD  
US Geological Survey  
Regional Director, Southwest Region  
P.O. Box 25046 MS 911  
Denver, CO 80225-0046

303-236-5548 office  
573-999-0198 cell  
email: [methridge@usgs.gov](mailto:methridge@usgs.gov)

--

Max M Ethridge, PhD  
US Geological Survey  
Regional Director, Southwest Region  
P.O. Box 25046 MS 911  
Denver, CO 80225-0046

303-236-5548 office  
573-999-0198 cell  
email: [methridge@usgs.gov](mailto:methridge@usgs.gov)